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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/942,747	08/30/2001	Charles Scott Graham	AUS920010489US1	9986

35525 7590 01/26/2006

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EXAMINER	
DAVIS, CYNTHIA L	
ART UNIT	**PAPER NUMBER**
2665	

DATE MAILED: 01/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/942,747	GRAHAM ET AL.	
	Examiner	Art Unit	
	Cynthia L. Davis	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 October 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. In view of the appeal brief filed on10/26/2005, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

Response to Arguments

2. Applicant's arguments with respect to claims 1-30 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 11, and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Krause.

Regarding claim 1, receiving a data packet having a header in which one or more Internet Protocol filter values are identified is disclosed in Krause, column 21, lines 26-27 and 33-37 (the Pkey is an IP filter value). Identifying a queue pair in a plurality of queue pairs based on the one or more filter values in the header the data packet, wherein a single channel adapter supports the plurality of queue pairs; and routing the data packet the identified queue pair is disclosed in column 25, lines 54-59 (disclosing routing to a QP based on a Pkey), figure 5, and column 10, lines 18-38 (showing an adapter endnode with multiple QPs).

Regarding claim 11, a computer program product in a computer readable medium for routing data packets is disclosed in Krause, column 1, lines 40-43 (disclosing that the system is implemented in a computer system). First instructions for receiving a data packet having a header in which one or more Internet Protocol filter values are identified is disclosed in Krause, column 21, lines 26-27 and 33-37 (the Pkey is an IP filter value). Second instructions for identifying a queue pair in a plurality of

queue pairs based on the one or more filter values in the header the data packet, wherein a single channel adapter supports the plurality of queue pairs; and third instructions for routing the data packet the identified queue pair is disclosed in column 25, lines 54-59 (disclosing routing to a QP based on a Pkey), figure 5, and column 10, lines 18-38 (showing an adapter endnode with multiple QPs).

Regarding claim 21, means for receiving a data packet having a header in which one or more Internet Protocol filter values are identified is disclosed in Krause, column 21, lines 26-27 and 33-37 (the Pkey is an IP filter value). Means for identifying a queue pair in a plurality of queue pairs based on the one or more filter values in the header the data packet, wherein a single channel adapter supports the plurality of queue pairs; and means for routing the data packet the identified queue pair is disclosed in column 25, lines 54-59 (disclosing routing to a QP based on a Pkey), figure 5, and column 10, lines 18-38 (showing an adapter endnode with multiple QPs).

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 2-4, 10, 12-14, 20, and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krause in view of Spinney.

Regarding claims 2, 12, and 22, generating a hash value based on the one or more IP values; and retrieving a hash table entry based on the hash value is not specifically disclosed in Krause. However, Krause does disclose in column 21, lines 33-37, a table storing IP addresses and Pkeys that is used to look up values used in

routing. Further, Spinney discloses in column 14, lines 5-15, using a hash table for address lookup. It would have been obvious to one skilled in the art at the time of the invention to use a hash table in the system of Krause. The motivation would be to have a table for looking up information needed to route the packets.

Regarding claims 3, 13, and 23, determining if a collision bit in the hash table entry is set; and retrieving a collision table entry corresponding the hash table entry if the collision bit is set is missing from Krause. However, Spinney discloses in column 14, lines 27-29, a setting a collision bit in an address lookup table. It would have been obvious to one skilled in the art at the time of the invention to use the collision bit of Spinney in the system of Krause. The motivation would be to avoid needing to choose a new hash function, which might require downtime (Spinney, column 14, lines 36-45).

Regarding claims 4, 14, and 24, comparing the one more IP filter values in the header of the data packet to filter values the in the collision table entry; identifying the queue pair based on the comparison of the one or more IP filter values in the header of the data packet to filter values in the collision table entry is missing from Krause. However, Krause does disclose in column 21, lines 25-26 and 33-37, IP filter values in a packet header used to identify a QP. Further, Spinney discloses in column 14, lines 27-36, comparing addresses to a collision table. It would have been obvious to one skilled in the art at the time of the invention to use the collision table of Spinney in the system of Krause. The motivation would be to avoid needing to choose a new hash function, which might require downtime (Spinney, column 14, lines 36-45).

Regarding claims 10, 20, and 30, identifying a queue pair in a plurality of queue pairs based on the one or more IP filter values in the header of the data packet includes using a content addressable memory is missing from Krause. This is disclosed in Spinney, column 14, line 29. It would have been obvious to one skilled in the art at the time of the invention to use the CAM of Spinney in the system of Krause. The motivation would be to use a widely available type of hardware to implement the memory.

5. Claims 5, 8-9, 15, 18-19, 25, and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krause in view of Spinney in further view of Acharya.

Regarding claims 5, 15, and 25, being implemented in a host channel adapter set up to support filtering is missing from Krause. However, filtering packets in a network is disclosed in Spinney, column 14, lines 33-34 (disclosing filtering packets). Also, Acharya discloses in column 1, lines 59-63, that an HCA is merely a network interface. It would have been obvious to one skilled in the art at the time of the invention to set up the adapters of Krause to support filtering. The motivation would be to filter packets in the network, enabling multicasting and SNAP filtering (see Spinney, column 14, lines 33-34).

Regarding claims 8, 18, and 28, the Modify QP verb identifies the filter value for each filter value for each filter type enabled from filter types supported by a corresponding host channel adapter is missing from Krause. However, identifying filter types is disclosed in Spinney, column 14, lines 33-34. Also, Acharya discloses in column 1, line 67-column 2, line 6, that verbs are how HCA's in InfiniBand customarily

communicate with resources on the network. It would have been obvious to one skilled in the art at the time of the invention to use a Modify QP verb to identify filter values in the invention of Krause. The motivation would be to use a built-in InfiniBand command.

Regarding claims 9, 19, and 29, the one or more filter values are Internet Protocol over InfiniBand transport and/or network layer filter values is missing from Krause. However, Acharya discloses in column 1, lines 41-48, a network using InfiniBand and TCP/IP. It would have been obvious to one skilled in the art at the time of the invention to use IP over InfiniBand in the filtering system of Krause. The motivation would be to use a particular type of commercially available network.

6. Claims 6-7, 16-17, and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krause in view of Acharya.

Regarding claims 6, 16, and 26, the host channel adapter being set up to support filtering by using a Modify HCA verb to enable filtering in the host channel adapter is missing from Krause. However, Acharya discloses in column 1, line 67-column 2, line 6, that verbs are how HCA's in InfiniBand customarily communicate with resources on the network. It would have been obvious to one skilled in the art at the time of the invention to use a Modify HCA verb to enable filtering in the invention of Krause. The motivation would be to use a built-in InfiniBand command.

Regarding claims 7, 17, and 27, the queue pair is a queue pair that is set up to support filtering by using a Modify QP verb to enable filtering is missing from Krause. However, Acharya discloses in column 1, line 67-column 2, line 6, that verbs are how HCA's in InfiniBand customarily communicate with resources on the network. It would

have been obvious to one skilled in the art at the time of the invention to use a Modify QP verb to enable filtering in the invention of Krause. The motivation would be to use a built-in InfiniBand command.

Conclusion

Applicant's amendment filed 6/6/2005 necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia L Davis whose telephone number is (571) 272-3117. The examiner can normally be reached on 8:30 to 6, Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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